

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ROBERT KUHLMANN and KARL MEIER

Appeal 2006-2186
Application 09/991,640
Technology Center 1700

Decided: September 26, 2006

Before KRATZ, TIMM, and JEFFREY T. SMITH, *Administrative Patent Judges*.

TIMM, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal the rejection of claims 1-14 and 17. The only other claims pending in this application, claims 15 and 16, have been indicated as allowed by the Examiner (Answer § 3; *see also* Reply Br. ftnt. 1). We have jurisdiction over the appeal pursuant to 35 U.S.C. § 134.

INTRODUCTION

The claims are directed to precipitated silica having particular characteristics and various methods of making and using the precipitated silica. Claims 1 and 5 are illustrative:

1. A precipitated silica having the following physico-chemical characteristics:

pH (5% in water) (ISO 787-9)		3-8
BET surface area (DIN 66131)	(m ² /g)	400 - 600
DBP absorption value (DIN 53601, in relation to dried substance) (g/100 g)		>380 - 420
Tapped density (ISO 787-11)	(g/l)	100 - 200
ALPINE sieve residue >63 μ (ISO 8130-1)	(%)	0.1 - 40

5. A process for manufacturing a precipitated silica, which comprises:

while stirring water in a vessel with a force sufficient to subject the medium to shear containing water heated to 35°C to 45°C,

a) adding water and sulfuric acid together within at least 100 minutes, to the vessel and maintaining a pH of 6-7, wherein the addition of substances is interrupted for 60 to 120 minutes and when the addition of the substances to the vessel has been completed, a solids content of 36 to 42 g/l remains; and

b) filtering the solid matter, washing the filter cake and subjecting the solid material to a short retention drying process,

wherein the precipitated silica has the following physico-chemical characteristics:

pH (5% in water) (ISO 787-9)		3-8
BET surface area (DIN 66131)	(m ² /g)	400 - 600
DBP absorption value (DIN 53601, in relation to dried substance) (g/100 g)		>380 - 420
Tapped density (ISO 787-11)	(g/l)	100 - 200
ALPINE sieve residue >63 μ (ISO 8130-1)	(%)	0.1 - 40

Claims 1-14 and 17 stand rejected under 35 U.S.C. § 103(a) as unpatentable over US Patent 4,495,167 issued on January 22, 1985 to Nauroth.¹

Appellants state that claims 5, 10, 11, 13, and 14 each stand or fall separately from claim 1 (Br. 3). To the extent that these claims are argued separately, we consider them separately.

Substantially for the reasons advanced by the Examiner, we sustain the rejection with regard to claims 1-4, 10-14, and 17. We, however, do not sustain the rejection with regard to claims 5-9. Our reasons follow.

OPINION

Regarding claim 1, the Examiner has established a prima facie case of obviousness over Nauroth. Nauroth discloses a precipitated silica having properties within or overlapping the claimed ranges except for the dibutylphthalate absorption number (DBP number) which is closely abutting the claimed range (Nauroth: 380% versus Claim 1: greater than 380%). There is also an example (Nauroth, Example 1) that describes a silica with a 380% DBP number, a number only infinitesimally smaller than the lower end of the claimed range of greater than 380%. The other examples as well as the disclosure as a whole indicates that process parameters such as, for instance, aging time, affect the DBP value (*see* Nauroth, Examples 1-5 and Table 2). The process used to obtain the silica contains a number of selections which must be made (temperature, pH, aging time, etc.) and one

¹ The rejection of claims 15-16 under 35 U.S.C. § 103(a) and the rejection of claims 1-4 and 10-17 under 35 U.S.C. § 112, ¶ 1 are presumed withdrawn as they were not reproduced in the Answer and claims 15-16 have been indicated as allowed.

of ordinary skill in the art would have selected those variables to optimize the DBP number. Those silicas slightly outside the 340-380% range of Nauroth would have been expected to perform similarly to the silica having properties within the range.

Appellants allege that, as confirmed by Reference Example 1 reproduced in their specification (specification 6-7), the DBP absorption number reported in Example 1 of Nauroth is incorrect. Appellants state that the DBP number is actually 355 g/100g (Br. 3-4). Appellants further state in the Brief that “to the best of their knowledge a DBP absorption value of at least 380 g/100 g cannot be obtained by the process disclosed in Nauroth.” (Br. 4). According to Appellant, Nauroth “does not enable one of ordinary skill in the art how to obtain a DBP absorption value of as high as 380,” and moreover, “there is no disclosed or suggested motivation to prepare a precipitated silica having a DBP absorption value of even infinitesimally greater than 380, but even if there was such motivation, [Nauroth] does not disclose how to do so.” (Br. 4-5).

The first question raised by Appellants’ arguments is whether the disclosure of Nauroth would have enabled the skilled artisan to make a silica with a DBP number of 380%. References relied upon to support a rejection under 35 U.S.C. § 103(a) must provide an enabling disclosure, i.e., they must place the claimed invention in the possession of the public. *In re Payne*, 606 F.2d 303, 315, 203 USPQ 245, 255 (CCPA 1979). Because Nauroth specifically exemplifies a process in which silica with a DBP number of 380% is obtained, Nauroth, *prima facie*, is enabled for this DBP value. The burden, therefore, shifts to Appellants to show that, in fact, one

of ordinary skill in the art would not have been able to obtain silica with a DBP number of 380%. *Id.*

We cannot agree that Appellants have satisfied their burden.

As a first matter, we are not convinced that Reference Example 1 of Appellants' specification reproduces the process of Example 1 closely enough to show that the DBP number of 380% reported in Nauroth's Example 1 was incorrect. We are cognizant of the fact that Appellants' Reference Example 1 states that the precipitation of silica was conducted as described in Example 1 of EP 0 078 909, a document which Appellants confirmed at the hearing² is equivalent in disclosure to Nauroth.³ However, in the details, Reference Example 1 differs from the Example 1 of Nauroth. For instance, Appellants' Reference Example 1 reports the solids content of the precipitation suspension as 47 g/l while that of Nauroth is 46 g/l. Nauroth seems to indicate that establishing a silica concentration of 46 g/l is important for obtaining the DBP number and other properties (*see* Nauroth, col. 3, ll. 6-35). We also note that there are differences in the speeds at which the water glass and sulfuric acid were added to the precipitation vessel. For water glass the difference could be attributed to rounding (9.8 versus 10 m³/h), but the difference for sulfuric acid cannot be so attributed (0.98 versus 0.9 m³/h). Because there are differences between Example 1 of Nauroth and Reference Example 1 of the specification, the evidence is insufficient to show that the DBP value of 380% reported in Nauroth was not, in fact, obtained or would have been unobtainable by one of ordinary skill in this art.

² Hearing of September 14, 2006.

³ Nauroth and EP 0 078 909 both list DE 3144299 as a priority document.

Appellants' contention in the Brief that the value reported in Example 1 of Nauroth is incorrect is further thrown into doubt by another statement within Appellants' specification, namely, the last two lines on page 1. The last two lines of page 1 state that "[s]ilicas with DBP absorption values of up to [380g/100 g] are known as described in EP 0 078 909."⁴

As a second matter, the statement that "to the best of their knowledge a DBP absorption value of at least 380 g/100 g cannot be obtained by the process disclosed in Nauroth" is merely attorney argument unsupported by competent factual evidence. "Arguments of counsel unsupported by competent factual evidence of record are entitled to little weight." *Payne*, 606 F.2d at 315, 203 USPQ at 256.

With regard to Appellants' argument that "there is no disclosed or suggested motivation to prepare a precipitated silica having a DBP absorption value of even infinitesimally greater than 380, but even if there was such motivation, [Nauroth] does not disclose how to do so," we find this argument unpersuasive. Those of ordinary skill in the art would have expected such silicas of slightly higher DBP value to behave similarly to those at 380%. Nauroth does not state that such higher DBP values are undesirable or unobtainable and in the face of the evidence as a whole it would appear that values slightly higher than 380% are reasonably suggested by Nauroth. Such values are within Appellants' claimed range. Nor have Appellants substantiated that such DBP values would not be obtainable by

⁴ We regard "g/110 g" as recited on page 1 and in Reference Example 1 as a typographical error because EP 0 078 909 reports DBP values as percentages, i.e., g/100 g, and Appellants report DBP values elsewhere in g/100 g. Moreover, while Reference Example 1 recites the DBP number as 355 g/110 g, the Table on page 10 of the specification lists the same DBP value of 355 in g/100 g.

one of ordinary skill in the upon routine experimentation in order to optimize the characteristics, including high DBP values, of precipitated silicas obtained based on the disclosure of Nauroth and given the level of skill of such an ordinary artisan.

With respect to claims 10, 11, 13, and 14, Appellants' arguments are not persuasive because they merely state that the reference does not teach or suggest what is recited in the claim without addressing the findings of the Examiner.

Turning to claim 5, we are in agreement with Appellants that the Examiner has not established a prima facie case of obviousness with respect to the subject matter of this claim. Specifically, claim 5 requires a step of adding water and sulfuric acid and conducting the process such that a solids content of 36 to 42 g/l remains. Nauroth states that the precipitated silica of the disclosed properties is obtained by a process in which a silica final concentration of 46 g/l is established (Nauroth, col. 21-22; col. 4, ll. 24-25). The Examiner relies upon the recitation of "about 46 g/l" in claim 4 of Nauroth to support a finding that Nauroth would suggest a range of acceptable values at least including 42 g/l to one of ordinary skill in the art. Given that the only value disclosed in the portion of the patent teaching how to make and use the precipitated silica is 46 g/l, we cannot agree that Nauroth supports this finding of the Examiner.

We conclude that the Examiner failed to establish a prima facie case of obviousness with respect to the subject matter of claims 5-9.

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CONCLUSION

In summary, we sustain the rejection under 35 U.S.C. § 103(a) in so far as it is applied to claims 1-4 and 10-17, but we do not sustain the rejection as applied against claims 5-9. Accordingly, the decision of the Examiner is affirmed-in-part.

AFFIRMED-IN-PART

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